

## What is claimed is:

1. A coupon used for measuring corrosion rates of material exposed to hostile environment comprising:

a substrate,

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a first thin film resistive element carried on such substrate and exposed to the hostile environment, and

a second thin film resistive element carried by said substrate and shielded from the hostile environment, said first and second thin film resistive elements positioned so that they are subjected to essentially the same temperature.

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- 2. A coupon as in claim 1 in which said thin metal elements are composed of a material which has substantially the same resistance before being subjected to a corrosive environment.
- 15 3. A coupon as in claims 1 or 2 in which the substrate is an insulator.
  - 4. A coupon in as in claim 1 in which the substrate is a ceramic.
  - 5. A coupon as in claim 4 in which the ceramic is beryllium oxide.

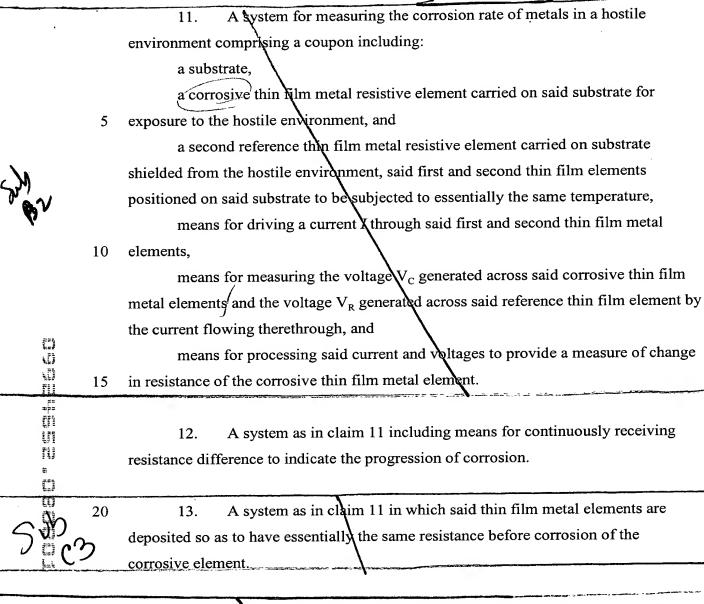
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- 6. A coupon as in claim 1 in which the substrate is a metal with a insulating surface oxide film.
  - 7. A coupon as in claim 6 in which the substrate is FeCrAlY.

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- 8. A coupon as in claims 1 or 2 in which said first and second resistive elements are on the same side of the substrate.
- 9. A coupon as in claim 2 in which said material forming the thin films is 30 a metal or metal alloy.
  - 10. A coupon as in claims 1 or 2 in which said first and second resistive elements are on opposite sides of the substrate and the substrate is thermally thin.

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14. A coupon for use in measuring the corrosion rate of metals exposed to a 25 high-temperature hostile environment comprising:

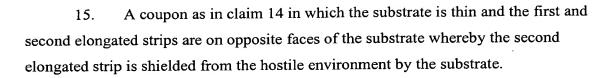
a substrate,

a first thin narrow elongated strip of metal or metal alloy adapted to be exposed to the hostile environment carried by said substrate,

a second thin narrow elongated strip of the same metal or metal alloy as the first carried by the substrate and shielded from the hostile environment but exposed to the substantially the same high temperature as the first elongated strip of metal or metal alloy.

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- 5 16. A coupon as in claim 15 wherein the second elongated strip is further shielded by an oxide film on its exposed surface.
  - 17. A coupon as in claim 14 in which said first and second elongated strips are on the same face of the substrate and the exposed face of the second strip is shielded from the hostile environment by an oxide film.
  - 18. A coupon as in claim 17 in which the first and second elongated strips extend adjacent to one another in close proximity.
  - 19. A coupon as in claim 17 in which said first elongated strip overlies the second strip and is insulated therefrom by an oxide film.
  - 20. A coupon as in any of claims 14, 15, 16, 17, 18-or-19 in which the substrate is a ceramic.
  - 21. A coupon as in any of claims 14, 15, 16, 17, 18 or 19 in which said substrate is a metal with an oxide insulating and protective film.
- 22. A coupon as in claim 15 including a third elongated strip adapted to be exposed to the hostile environment adjacent the other side of the first elongated strip and exposed to substantially the same temperature.
  - 23. A coupon as in claim 18 or 19 in which the elongates strips spiral.

24. A coupon as in claim 18 or 19 in which the strips zig-zag.

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